

# SEQUENCE LISTING

<110> Lehar, Sophie  
Manning, Stephen  
Coyle, Anthony J.  
Gutierrez-Ramos, Jose-Carlos

<120> Novel Th2-Specific Molecules and Uses Thereof

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Gln Gln Phe Lys Met Gln Leu Leu Lys Gly Gly Gln Ile Leu Cys Asp  
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Tyr Asn Leu Asp His Ser His Ala Asn Tyr Tyr Phe Cys Asn Leu Ser  
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His Ile Tyr Glu Ser Gln Leu Cys Cys Gln Leu Lys Phe Trp Leu Pro  
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 Glu Glu Asn Thr Phe Tyr Ser Trp Leu Glu Gly Leu Cys Val Glu Lys  
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aga gca ttc tac aga ctt ata tct ggc cta cat gca agc att aat gtg 875  
 Arg Ala Phe Tyr Arg Leu Ile Ser Gly Leu His Ala Ser Ile Asn Val  
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 His Leu Ser Ala Arg Tyr Leu Leu Gln Glu Thr Trp Leu Glu Lys Lys  
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 Trp Gly His Asn Ile Thr Glu Phe Gln Gln Arg Phe Asp Gly Ile Leu  
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 370 375 380 385

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 Lys Leu Lys Glu Asp Phe Arg Leu His Phe Arg Asn Ile Ser Arg Ile  
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 Arg Asp Cys Ala Val Lys Pro Cys Gln Ser Asp Glu Val Pro Asp Gly  
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 Glu Glu Cys Glu Gln Ala Glu Arg Leu Gly Ala Val Asp Glu Ser Leu  
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 Ser Lys Lys Lys Val Phe Asp Ile Gln Ser Pro Glu Ala Glu Tyr Val  
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 Asp Leu Leu Leu Asn Pro Glu Arg Tyr Thr Gly Tyr Lys Gly Pro Asp  
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 Arg Pro Asp Phe Gln Leu Phe Thr Gly Asn Lys Ile Gln Asp Glu Glu  
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Asp Phe	Val Ser	Leu Ser	Ser Arg	Glu Glu	Val Gln	Glu Asn Cys Val	
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cgg tgg	cga aag	agg ttc	acc ttc	gtg tgt	aag atg	agt gct aac ccg	543
Arg Trp	Arg Lys	Arg Phe	Thr Phe	Val Cys	Lys Met	Ser Ala Asn Pro	
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Ala Thr	Gly Leu	Leu Asp	Pro Cys	Val Phe	Arg Val	Ser Val Arg Lys	
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Glu Leu	Lys Gly	Gly Lys	Ala Tyr	Ser Lys	Leu Gly	Phe Ala Asp Leu	
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aac ctg	gcc gag	ttt gcg	ggc tcg	ggc tcc	acg gtg	cgc tgc tgc ctg	687
Asn Leu	Ala Glu	Phe Ala	Gly Ser	Gly Thr	Val Val	Arg Cys Cys Leu	
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Leu Glu	Gly Tyr	Asp Thr	Lys Asn	Thr Arg	Gln Asp	Asn Ser Ile Leu	
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Lys Val	Thr Ile	Gly Met	Phe Leu	Leu Ser	Gly Asp	Pro Cys Phe Lys	
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Thr Pro	Pro Ser	Thr Ala	Lys Ser	Ile Ser	Ile Pro	Gly Gln Asp Ser	
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Ser Leu	Gln Leu	Thr Cys	Lys Gly	Gly Gly	Thr Ser	Ser Gly Gly Ser	
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Ser Thr	Asn Ser	Leu Thr	Gly Ser	Arg Pro	Pro Lys	Ala Arg Pro Thr	
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Cys	Lys	Val	Arg	Leu	Leu	Asp	Gly	Gly	Asp	Phe	Val	Ser	Leu	Ser	Ser
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Arg	Glu	Glu	Val	Gln	Glu	Asn	Cys	Val	Arg	Trp	Arg	Lys	Arg	Phe	Thr
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Phe	Val	Cys	Lys	Met	Ser	Ala	Asn	Pro	Ala	Thr	Gly	Leu	Leu	Asp	Pro
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Cys	Val	Phe	Arg	Val	Ser	Val	Arg	Lys	Glu	Leu	Lys	Gly	Gly	Lys	Ala
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Tyr	Ser	Lys	Leu	Gly	Phe	Ala	Asp	Leu	Asn	Leu	Ala	Glu	Phe	Ala	Gly
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Leu	Leu	Ser	Gly	Asp	Pro	Cys	Phe	Lys	Thr	Pro	Pro	Ser	Thr	Ala	Lys
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165 170 175

Gly Gly Gly Thr Ser Ser Gly Gly Ser Ser Thr Asn Ser Leu Thr Gly  
180 185 190

Ser Arg Pro Pro Lys Ala Arg Pro Thr Ile Leu Ser Ser Gly Leu Pro  
195 200 205

Glu Glu Pro Asp Gln Asn Leu Ser Ser Pro Glu Glu Val Phe His Ser  
210 215 220

Gly His Ser Arg Asn Ser Ser Tyr Ala Ser Gln Gln Ser Lys Ile Ser  
225 230 235 240

Gly Tyr Ser Thr Glu His Ser Arg Ser Ser Ser Leu Ser Asp Leu Thr  
245 250 255

His Arg Arg Asn Thr Ser Thr Ser Ser Ser Ala Ser Gly Gly Leu Gly  
260 265 270

Met Thr Val Glu Gly Pro Glu Gly Ser Glu Arg Glu His Arg Pro Pro  
275 280 285

Glu Lys Pro Pro Arg Pro Pro Arg Pro Leu His Leu Ser Asp Arg Ser  
290 295 300

Phe Arg Arg Lys Lys Asp Ser Val Glu Ser His Pro Thr Trp Val Asp  
305 310 315 320

Asp Thr Arg Ile Asp Ala Asp Ala Ile Val Glu Lys Ile Val Gln Ser  
325 330 335

Gln Asp Phe Thr Asp Gly Ser Asn Thr Glu Asp Ser Asn Leu Arg Leu  
340 345 350

Phe Val Ser Arg Asp Gly Ser Ala Thr Leu Ser Gly Ile Gln Leu Ala  
355 360 365

Thr Arg Val Ser Ser Gly Val Tyr Glu Pro Val Val Ile Glu Ser His  
370 375 380

<210> 17  
<211> 442  
<212> PRT  
<213> Trypanosoma brucei

<400> 17  
Met Leu Lys Met Arg Leu Leu Ile Val Val Pro Val Leu Leu Gly Leu  
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Val Trp Gln Ile Leu Leu Arg Ala Glu Leu Asp Gly Val Ser Phe Phe

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Gly	Met	Tyr	Ile	Ser	Ala	Asn	Asn	Ser	Gly	Ala	Gly	Ser	Tyr	Val	Arg				
		35					40				45								
Thr	Lys	Lys	Gly	Asn	Ala	Leu	Lys	Glu	Gly	Phe	Cys	Ser	Leu	Thr	Met				
		50					55				60								
Asp	Glu	Val	Ser	Gln	Asn	Thr	Glu	Gly	Ile	Thr	Gly	Leu	Leu	Asn	Asn				
		65					70				75		80						
Ile	Thr	Ser	His	Pro	Tyr	Phe	Arg	Tyr	Phe	Lys	Val	Asn	Leu	Asp	Arg				
		85						90				95							
Glu	Cys	Arg	Tyr	Trp	Val	Ala	Glu	Ala	Ser	Cys	Thr	Cys	Asp	Ser	Asn				
		100				105				110									
Gly	Cys	Gln	Ile	Cys	Thr	Cys	Asp	Asp	Ser	Gly	Ile	Pro	Glu	Thr	Leu				
		115				120				125									
Lys	Tyr	Pro	Tyr	Asp	Met	Ser	Asp	Val	Ser	Ala	Val	Glu	Arg	Arg	Thr				
		130				135				140									
Ala	Pro	Asp	Lys	His	Ala	Ala	Lys	Gly	Phe	Glu	Asp	Glu	Ile	Lys	Pro				
		145		150				155					160						
Ile	Asp	Pro	Asp	Arg	Asp	Ala	Thr	Tyr	Val	Asp	Leu	Leu	Gln	Asn	Pro				
				165				170				175							
Glu	Ala	Asn	Thr	Gly	Tyr	Ser	Gly	Pro	Lys	Ala	Ala	Arg	Val	Trp	Gln				
		180						185				190							
Ala	Val	Tyr	Asp	Asn	Cys	Asn	Ile	Asp	Gly	Leu	Pro	Ser	Asn	Asp	Thr				
		195				200				205									
Ala	Gly	Val	Glu	Asn	Arg	Glu	Lys	Ala	Leu	Leu	Arg	Gln	Leu	Leu	Ser				
		210				215				220									
Gly	Leu	His	Thr	Ser	Ile	Thr	Met	His	Val	Ala	Ala	Phe	Phe	Tyr	Asn				
		225				230				235		240							
Asp	Thr	Lys	Gly	Asp	Ser	Pro	Leu	Arg	Ser	Leu	Gly	Val	Leu	Asn	Asn				
				245				250				255							
Pro	Asn	Ile	Ser	Phe	Tyr	Pro	Asn	Cys	Gly	Met	Phe	Arg	Arg	Ile	Val				
		260						265				270							
Lys	Asn	Asp	Glu	Phe	Ile	Arg	Asn	Leu	Phe	Val	Val	Tyr	Gln	Phe	Val				
		275				280						285							
Leu	Arg	Ala	Val	Ala	Lys	Thr	Lys	Arg	Ala	Phe	Leu	Ala	Asn	Ser	Ser				
		290				295				300									
Leu	Tyr	Asn	Ser	Gly	Phe	Asn	Gly	Ala	Ala	Thr	Asp	Gly	Asp	Val	Arg				



Cys Lys Ile Glu Phe Met Tyr Pro Pro Pro Tyr Leu Asp Asn Glu Arg  
 115 120 125  
 Ser Asn Gly Thr Ile Ile His Ile Lys Glu Lys His Leu Cys His Thr  
 130 135 140  
 Gln Ser Ser Pro Lys Leu Phe Trp Ala Leu Val Val Val Ala Gly Val  
 145 150 155 160  
 Leu Phe Cys Tyr Gly Leu Leu Val Thr Val Ala Leu Cys Val Ile Trp  
 165 170 175  
 Thr Asn Ser Arg Arg Asn Arg Leu Leu Gln Val Thr Thr Met Asn Met  
 180 185 190  
 Thr Pro Arg Arg Pro Gly Leu Thr Arg Lys Pro Tyr Gln Pro Tyr Ala  
 195 200 205  
 Pro Ala Arg Asp Phe Ala Ala Tyr Arg Pro  
 210 215  
 <210> 19  
 <211> 220  
 <212> PRT  
 <213> Homo sapiens  
 <400> 19  
 Met Leu Arg Leu Leu Leu Ala Leu Asn Leu Phe Pro Ser Ile Gln Val  
 1 5 10 15  
 Thr Gly Asn Lys Ile Leu Val Lys Gln Ser Pro Met Leu Val Ala Tyr  
 20 25 30  
 Asp Asn Ala Val Asn Leu Ser Cys Lys Tyr Ser Tyr Asn Leu Phe Ser  
 35 40 45  
 Arg Glu Phe Arg Ala Ser Leu His Lys Gly Leu Asp Ser Ala Val Glu  
 50 55 60  
 Val Cys Val Val Tyr Gly Asn Tyr Ser Gln Gln Leu Gln Val Tyr Ser  
 65 70 75 80  
 Lys Thr Gly Phe Asn Cys Asp Gly Lys Leu Gly Asn Glu Ser Val Thr  
 85 90 95  
 Phe Tyr Leu Gln Asn Leu Tyr Val Asn Gln Thr Asp Ile Tyr Phe Cys  
 100 105 110  
 Lys Ile Glu Val Met Tyr Pro Pro Pro Tyr Leu Asp Asn Glu Lys Ser  
 115 120 125  
 Asn Gly Thr Ile Ile His Val Lys Gly Lys His Leu Cys Pro Ser Pro  
 130 135 140

Leu Phe Pro Gly Pro Ser Lys Pro Phe Trp Val Leu Val Val Val Gly  
 145 150 155 160  
 Gly Val Leu Ala Cys Tyr Ser Leu Leu Val Thr Val Ala Phe Ile Ile  
 165 170 175  
 Phe Trp Val Arg Ser Lys Arg Ser Arg Leu Leu His Ser Asp Tyr Met  
 180 185 190  
 Asn Met Thr Pro Arg Arg Pro Gly Pro Thr Arg Lys His Tyr Gln Pro  
 195 200 205  
 Tyr Ala Pro Pro Arg Asp Phe Ala Ala Tyr Arg Ser  
 210 215 220

<210> 20  
 <211> 223  
 <212> PRT  
 <213> Mus sp.

<400> 20  
 Met Ala Cys Leu Gly Leu Arg Arg Tyr Lys Ala Gln Leu Gln Leu Pro  
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 Ser Arg Thr Trp Pro Phe Val Ala Leu Leu Thr Leu Leu Phe Ile Pro  
 20 25 30  
 Val Phe Ser Glu Ala Ile Gln Val Thr Gln Pro Ser Val Val Leu Ala  
 35 40 45  
 Ser Ser His Gly Val Ala Ser Phe Pro Cys Glu Tyr Ser Pro Ser His  
 50 55 60  
 Asn Thr Asp Glu Val Arg Val Thr Val Leu Arg Gln Thr Asn Asp Gln  
 65 70 75 80  
 Met Thr Glu Val Cys Ala Thr Thr Phe Thr Glu Lys Asn Thr Val Gly  
 85 90 95  
 Phe Leu Asp Tyr Pro Phe Cys Ser Gly Thr Phe Asn Glu Ser Arg Val  
 100 105 110  
 Asn Leu Thr Ile Gln Gly Leu Arg Ala Val Asp Thr Gly Leu Tyr Leu  
 115 120 125  
 Cys Lys Val Glu Leu Met Tyr Pro Pro Pro Tyr Phe Val Gly Met Gly  
 130 135 140  
 Asn Gly Thr Gln Ile Tyr Val Ile Asp Pro Glu Pro Cys Pro Asp Ser  
 145 150 155 160  
 Asp Phe Leu Leu Trp Ile Leu Val Ala Val Ser Leu Gly Leu Phe Phe



Arg Ser Pro Leu Thr Thr Gly Val Tyr Val Lys Met Pro Pro Thr Glu  
195 200 205

Pro Glu Cys Glu Lys Gln Phe Gln Pro Tyr Phe Ile Pro Ile Asn  
210 215 220

<210> 22

<211> 284

<212> PRT

<213> Caenorhabditis elegans

<400> 22

Met Asn Phe Ile Ser Ala Lys Leu Val Phe Val Pro Trp Leu Trp Asn  
1 5 10 15

Lys Met Ala Phe Ile Lys Arg Lys Thr Val Lys Phe Ser Val Asp Leu  
20 25 30

Gln Val Cys Gln Leu Ser Asp Val Pro Leu Val Asn Ala Thr Val Phe  
35 40 45

Gly Lys Met Arg Leu Leu Asp Gly Gly Ser Phe Glu Glu Ala Thr Glu  
50 55 60

Arg Val Glu Glu Gln Lys Gly Gly Lys Ser Tyr Lys Leu Gly Phe  
65 70 75 80

Val Asp Ile Asn Leu Ser Glu Tyr Ala Ala Ser Gly Val Glu Gly Ile  
85 90 95

Ser Arg Thr Tyr Leu Leu Asn Gly Tyr Thr Ser Asn Gln Arg Leu Asp  
100 105 110

Asn Ser Lys Val Cys Ile Lys Val Ala Met Thr His Gln Ser Ala Asp  
115 120 125

Pro Phe Phe Arg Val Pro Arg Leu Ser Thr Phe Gly Pro Arg Gln Asp  
130 135 140

Gly Ala Ile Asp Gln Asp Gly Phe Arg Ala Asp Asp Glu Thr Asp Ser  
145 150 155 160

Glu Glu Gly Thr Ser Ser His Pro Lys Leu Ser Asn Val Asp Val Leu  
165 170 175

Glu Ser Ser Ser Ala Ala Ser Asn Ser Gln Val Asp Glu Pro Val Val  
180 185 190

Glu Arg Arg Val Ile His Pro Pro Gln His Pro Thr Cys Gln Leu Arg  
195 200 205

Arg Phe Ser Gln Asp Arg Ser Ala Gln Lys Ile Gln His Ser Arg Phe  
210 215 220

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